REMARKS

35 U.S.C. § 112, first paragraph

The examiner rejected claims 1-3, 7-19, 26-30, 32, 33, 36, and 38-40 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement The examiner stated:

> **Applicant's specification fails to describe establishing by the destination computer system a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service, the forwarder/relay service maintaining the second session if the first session is temporarily lost and reestablishing the virtual connection when the first session is re-established. The specification on the other hand describes on page 16, line 18 - page 17, line 13 the use of one firewall and fails to describe a second bi-directional barrier traversal session and the destination computer system establishing a second bi-directional barrier traversal session, thus fails to support "establishing by the destination computer system a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service, the forwarder/relay service maintaining the second session if the first session is temporarily lost and reestablishing the virtual connection when the first session is reestablished" as claimed.**

Applicant directs the examiner to FIG. 7, where there is shown a clear depiction of a first and a second bi-directional barrier traversal session, labeled as #7. Within the text of the specification cited by the examiner, Applicants state the following:

> **Where remote listening is to be used, the data layer 39 in the destination endpoint 20 establishes a firewall traversal session to the physical server assigned to the local user in the same manner as described above for the source endpoint 5. [Specification, Page 16, Line 21 – Page 17, Line 1]**

This is a clear description of the establishment of a ***second*** bi-directional barrier traversal session.

Further, Applicant states in the specification:

> **For example, if the source endpoint 5 is a wireless, mobile device that can roam from one network to another, the service 15 can maintain the connection to the destination endpoint 20 even if the connection to the source endpoint temporarily is lost. In the event that the connection to the**

> **source endpoint 5 is lost temporarily, the destination endpoint 20 would not be made aware of that fact because its connection to the service 15 is maintained. To reestablish the session between the source endpoint 5 and the service 15, the client software 8 can retain information regarding the state of the session. When connectivity to the service 15 subsequently is reestablished, the information regarding the state of the lost session can be used to allow the session to continue from the point when the connection was lost. [Id., Page 19, Line 20 – Page 20, Line 11]**

This description clearly supports the claimed limitation: "the forwarder/relay service maintaining the second session if the first session is temporarily lost and reestablishing the virtual connection when the first session is re-established."

Accordingly, Claims 1-3, 7-19, 26-30, 32, 33, 36, and 38-40 satisfy the written description requirement, and Applicant requests that the rejection be withdrawn.

35 U.S.C. § 103

The examiner rejected of claims 1-3, 7-19, 32 and 36 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,754,707 ("Richards"), in view of U.S. Patent No. 6,421,732 ("Alkhatib"), in view of U.S. Patent No. 5,564,070 ("Want"), and in view of U.S. Patent No. 5,999,979 ("Vellanki").

Claim 1

The examiner states that:

> **Richards et al substantially discloses a method of establishing communications comprising: establishing a virtual connection between a source computer system and located behind a first connectivity barrier (firewall) and a destination computer system and located behind a second connectivity barrier (firewall), for example (see column 11, claim 1 and column 12, claim 14) wherein establishing the virtual connection comprising: establishing by the source computer system a first bi-directional barrier traversal session (both the client and the service provider connect to the nexus (service) and the nexus is able to communicate with them, see example figure 9 with description, column 9, line 50-column 10, line 48) between the source computer system and a forwarder/relay service and establishing by the destination computer system a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service, for example (see column 11, claim 1 and column 12, claim 14).**

Without conceding the examiner's contentions with respect to claim 1, in order to clarify the nature of the bi-directional barrier traversal sessions, Applicant has amended claim 1 to recite that the bi-directional barrier traversal session between the source computer system and a forwarder/relay service are persistent sessions. Support for this amendment is found in, for example, in the Specification at Page 5, Lines 6-9.

Applicant contends that Richards, as understood, neither describes nor suggests "…establishing, by the source computer system, a first persistent, bi-directional barrier traversal session between the source computer system and a forwarder/relay service… and establishing, by the destination computer system, a second persistent, bi-directional barrier traversal session between the destination computer system and the forwarder/relay service…" as recited in claim 1. Rather, Richards states the following:

> **After the service provider 522 and the client computer 526 are connected to the nexus 110, the service provider 522 issues a command to run on the client computer 526 to generate configuration information. The command is sent to the nexus 110 using an up-spout and targeted toward the client computer 526. After sending the command, the service provider 522 waits for a response at his or her console. Eventually, the service provider 522 receives the configuration information from a service provider down-spout and displays the information on the console to diagnose the client computer 526.**
>
> **Turning now to the nexus 110, upon receiving a request for configuration command from the service provider 522 though the service provider up-spout, the nexus 110 forwards the command to the client computer 526 using a client down-spout. The nexus 110 then waits for additional commands from the service provider 522 or for responsive data from the client computer 526. Upon receipt of data from the client computer 526, the nexus 110 forwards the configuration results to the service provider 522 using the service provider down-spout. Then, the nexus 110 waits for more commands or data transmission. [Richards, Column 9, Line 57 – Column 10, Line 11]**

Although Richards is discussing information flow both to and from his nexus, Richards' sessions are not understood to be composed of a persistent, bi-directional barrier traversal session between the source computer system ("client") and a forwarder/relay service ("nexus") because, as Richards further states:

> **Client programs register with the nexus 110 to receive communications from the nexus 110. Upon registration with the nexus 110, the downspout 115 is created between the nexus 110 and the client 120. The downspout 115 is used to relay communications between the nexus 110 and the client 120. *The client 120 can then send "through" communications on a separate, one time connection, to the nexus 110, targeted towards another client such as the client 130.* The nexus 110 receives "through" communications, determines the appropriate destination client, and forward the communication on the destinations client's registered downspout. If a client needs to send a response back to the originating client, a new "through" communication is created and targeted towards the originating client. [Id., Column 5, Lines 31-44, emphasis added]**

That is, sessions ("connections") from the nexus to a client are established upon registration with the nexus. Thereafter, the client sends communications on a one time connection back to the nexus. This is in stark opposition to a persistent, bi-directional barrier traversal session that is required by claims 1-3, 7-19, 32 and 36.

The examiner further contends that

> **Richards et al is silent about representing data of a first application in a format associated with a proxy network protocol configured to communicate data corresponding to another application. However, Vellanki et al in an analogous art discloses selecting the most advantageous protocol for communication by a client computer (see column 3-4, summary of the invention) including representing data of a first application in a format associated with a proxy network protocol configured to communicate data corresponding to another application so that the data of the first application is communicated through the first connectivity barrier using the proxy network protocol" (see column 10, lines 44-54 and column 13, lines 4-17). Vellanki et al discloses data of the browser (first application) are represented in an HTTP format such as HTTP that is configured to communicate data corresponding to another application (such as proxy application or server application) so that the data of the client application is communicated through the first connectivity barrier using the proxy network protocol as interpreted by the Examiner. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Richards et al to "representing data of a first application in a format associated with a proxy network protocol that is configured to communicate data corresponding to another application so that the data of the first application is communicated through the first connectivity barrier using the proxy network protocol as taught by Vellanki et al because it would allow selection of the most advantageous protocol to be used based on predefined protocol priority (see column 4, lines 33-38). One of ordinary skill in the art would have recognized some of the advantages as suggested by Vellanki et al so that the most advantageous protocol can be selected to traverse the firewall (see column 3, lines 19-40 and 56- 60).**

Applicants contend that Vellanki fails to cure the deficiencies of Richards. Vellanki describes improved methods and apparatus for permitting a client computer in a client-server architecture computer network to automatically detect the most advantageous protocol among the protocols available (see Vellanki, Col. 1, Line 66 - Col. 2, Line 5). Vellanki as with Richards, does not describe a source and destination computers that each establish bi-directional barrier traversal sessions with an intermediate service (e.g., a proxy server, or claim 1's forward/relay service). Accordingly, Vellanki fails to disclose or suggest at least the features of "…establishing, by the source computer system, a first persistent, bi-directional barrier traversal session between the source computer system and a forwarder/relay service… and establishing, by the destination computer system, a second persistent, bi-directional barrier traversal session between the destination computer system and the forwarder/relay service…" as recited in claim 1.

The examiner further contends that

> **Richards et al discloses maintaining the first session, but does not explicitly state maintaining the second session. It is apparent that any of the endpoint sessions can be maintained while the other endpoint connection is temporarily lost and reestablishing connection (e.g. roaming between networks). Roaming between networks is notoriously well known for a wireless to search between networks to reestablish sessions. Maintaining a connection to a destination endpoint when the source roams between network as the connection can be temporary lost is well known in the art as disclosed by Want et al. Want et al teaches maintaining connections among various computers in a wireless network including mobile computers, and further discloses the importance of maintaining connection even if the connection of the source endpoint is temporarily lost (see prior art, column 3, line 45 through column 4, line 55). See also column 7, lines 15-43. Want et al discloses that the application session is maintained even if the session with the mobile is temporarily lost as the mobile reestablishes connection while roaming. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Richards et al to use source computer system as mobile users that can roam between networks and re-establish connection when the connection is temporarily lost while maintaining continuity session with the destination computer as taught by Want et al (column 7, lines 15-43) because one of the many advantages is that it permits any type of small device mobile units capable of roaming to use the system while maintaining processing continuity without compromising security (column 4, line 57 through column 5, line 40 and column 6, line 62 through column 7, line 43). One skilled in the art would have been motivated by the suggestions provided by Want et al in order to benefit from the advantages as discussed above and**

> **to be able to implement the invention with any mobile and stationary computers using various network systems.**

Applicant contends that Want fails to cure the deficiencies of Richards and/or Vellanki. Want describes a "**system for maintaining processing continuity in a network having a network accessible application and an intermittently connected wireless system** " [Want, Abstract]. Particularly, Want states the following:

> **Each mobile computer in the workplace environment is assigned at least one agent. The agent operates primarily for the benefit of its assigned computer. For example, agents are responsible for "knowing" the location of their assigned computers. All communications routed to and from a mobile computer goes through its agent. As the mobile computers in the present invention run applications on remote hosts, all communications between the mobile computer and its applications are mediated by its agent.**
>
> **In addition, agents are responsible for security for mobile computers. Any application requesting communication with the mobile unit must be authorized by the agent. Once communication between a mobile unit and an application is started, other applications wait until they are scheduled to start communications. [Want, FIG. 3, and Col. 4, Line 63 - Col. 5, Line 10]**

Want, however, fails to describe that the mobile computer and/or the applications on remote hosts establishes bi-directional barrier traversal communications with the agent. Accordingly, Want also fails to disclose or suggest at least the features of "…establishing, by the source computer system, a first persistent, bi-directional barrier traversal session between the source computer system and a forwarder/relay service… and establishing, by the destination computer system, a second persistent, bi-directional barrier traversal session between the destination computer system and the forwarder/relay service…," as recited in claim 1.

The examiner still further contends that

> **Richards et al does not explicitly disclose assigning virtual host name to the computer system. It is known in the art that the packet can contain IP addresses and port numbers or/and domain names. Alkhatib et al in an analogous art teaches an IPNet gateway service that can forward and relay connections wherein the destination server is assigned a domain name (column 2, lines 53-60 and figure 1) and the client may have also a domain name (column 6, lines 37-47) so that address translation can be performed. Alkhatib et al also discloses the use of gateway as firewall (see column 1, lines 30-35), which meets the recitation of a barrier between a computer system and the gateway service as per Examiner's interpretation.**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Richards et al to include a gateway service that can associate DNS requests with host names because it provides an improved process of addressing source and destination computers based on the requests by performing address translation (column 1, lines 25-40 and column 1, line 60 through column 2, line 7) that can also be interpreted as processed data using a network protocol configured to tunnel through the gateway firewall as taught by Alkhatib et al. One skilled in the art would have been motivated by the suggestions provided by Alkhatib et al to provide a service that can forward and relay connections wherein the destination server is assigned a domain name with an improved process of addressing source and destination computers based on the requests by performing address translation.

Applicant contends that Alkhatib fails to cure the deficiencies of Richards, Vellanki, and Want. Alkhatib describes an IPNet Gateway that maps multiple servers on a private IP network to a single IP address on the Internet. Alkhatib, however, neither describes nor suggests using an intermediary system, such as a forwarder/relay service. Alkhatib also does not describe establishing a communication link between a computer and such an intermediary system, nor does Alkhatib describe establishing a barrier traversal communication link where a connectivity barrier (e.g., a firewall) exists between the computer and the intermediary system.

Therefore, Alkhatib neither discloses nor suggests at least the features of "…establishing, by the source computer system, a first persistent, bi-directional barrier traversal session between the source computer system and a forwarder/relay service… and establishing, by the destination computer system, a second persistent, bi-directional barrier traversal session between the destination computer system and the forwarder/relay service…," as recited in claim 1.

None of Richards, Vellanki, Want, or Alkhatib, alone or in combination, describe or suggest at least the feature of "…establishing, by the source computer system, a first persistent, bi-directional barrier traversal session between the source computer system and a forwarder/relay service… and establishing, by the destination computer system, a second persistent, bi-directional barrier traversal session between the destination computer system and the forwarder/relay service…" Claim 1 is patentable over Richards in view of Vellanki, in view of Want, and in view of Alkhatib.

Claims 2, 3, 7-10, and 32 depend from claim 1, and are also patentable over Richards in view of Vellanki, in view of Want, and in view of Alkhatib.

Independent claim 11 recites "…establishing a persistent, bi-directional barrier traversal session, by the source computer system, between the source computer system located behind a first connectivity barrier and a forwarder/relay service…[and] establishing, by the destination computer system, a persistent, bi-directional barrier traversal transport level communications connection between the forwarder/relay service and the destination computer system, the destination computer system located behind a second connectivity barrier…", similar to claim 1. Claim 11 therefore is patentable over Richards, Vellanki, Want, or Alkhatib, alone or in combination for analogous reasons as given for claim 1.

Claims 12-19 and 36 depend from claim 11, and are also patentable over Richards in view of Vellanki, in view of Want, and in view of Alkhatib.

The examiner rejected claims 33 and 39 under 35 U.S.C. § 103(a) as being unpatentable over Richards in view of Alkhatib and in view of Want, and further in view of U.S. Patent No. 6,185,606 ("Bereiter").

Applicant has already shown above that none of Richards, Vellanki, or Want, alone or in combination, neither describe nor suggest at least the feature of "…establishing, by the source computer system, a first persistent, bi-directional barrier traversal session between the source computer system and a forwarder/relay service… and establishing, by the destination computer system, a second persistent, bi-directional barrier traversal session between the destination computer system and the forwarder/relay service…," as recited in claims 1 and 11, from which claims 33 and 39 depend, respectively. Applicant contends that Bereiter fails to cure the deficiencies of Richards, Vellanki, and Want. Therefore, claims 33 and 39 are allowable over the combination of references.

The examiner rejected claims 26 and 38 under 35 U.S.C. § 103(a) as being unpatentable over Richards in view of Want, in view of Vellanki.

Applicant has already shown that none of Richards, Want, or Vellanki, together or in combination, describe or suggest "…a first persistent, bi-directional barrier traversal session, initiated by [a] first computer system, between the first computer system and a forwarder/relay

service…,[and] a persistent, bi-directional barrier traversal session initiated by the second computer system if the second computer system is located behind a second connectivity barrier…", as recited by independent claim 26 (and similar to claims 1 and 11). As claim 38 depends from claim 26, claims 26 and 38 are patentable over Richards in view of Want, in view of Vellanki.

The examiner rejected claims 27, 28, and 40 under 35 U.S.C. § 103(a) as being unpatentable over Richards in view of Want, in view of Vellanki, and further in view of Bereiter.

Applicant has already shown that none of Richards, Want, Vellanki, or Bereiter, together or in combination, describe or suggest "…a first persistent, bi-directional barrier traversal session, initiated by [a] first computer system, between the first computer system and a forwarder/relay service…,[and] a persistent, bi-directional barrier traversal session initiated by the second computer system if the second computer system is located behind a second connectivity barrier…", as recited by independent claim 26, from which claims 27, 28, and 40 depend. Claims 27, 28, and 40 are patentable over Richards in view of Want, in view of Vellanki, and further in view of Bereiter.

The examiner rejected claims 39 and 40 under 35 U.S.C. § 103(a) as being unpatentable over Richards in view of Want, in view of Vellanki, and further in view of Alkhatib.

Applicant has already shown that none of Richards, Want, Vellanki, together or in combination, describe or suggest "…a first persistent, bi-directional barrier traversal session, initiated by [a] first computer system, between the first computer system and a forwarder/relay service…,[and] a persistent, bi-directional barrier traversal session initiated by the second computer system if the second computer system is located behind a second connectivity barrier…", as recited by independent claim 11 and similar to claim 26, from which claims 39 and 40 depend, respectively. Claims 39 and 40 are patentable over Richards in view of Want, in view of Vellanki, and further in view of Alkhatib

It is believed that all the rejections and/or objections raised by the examiner have been addressed.

In view of the foregoing, applicant respectfully submits that the application is in condition for allowance and such action is respectfully requested at the examiner's earliest convenience.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims

Please apply any other required fees to deposit account 06-1050, referencing the attorney docket number shown above.

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Respectfully submitted,

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